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PLASTICS: THE FACTS ABOUT PRODUCTION, USE, AND DISPOSAL

FROM EPA'S *REPORT TO CONGRESS ON METHODS TO MANAGE AND CONTROL PLASTIC WASTE*

Discarded plastic products and packaging make up a growing proportion of municipal solid waste. By the year 2000, the amount of plastic we throw away will increase by 50 percent. Current volume estimates for plastic waste range from 14 to 21 percent of the waste stream. By weight plastics contribute seven percent, and less than one percent of plastic waste is currently recycled. Additionally, some plastic items end up as litter that poses ecological risk in the marine environment and aesthetic and economic loss. Knowledge of the amounts, types, and uses of plastics produced in the United States is necessary for the evaluation of solutions.

The Major Plastics and Their Uses

The term "plastics" encompasses a wide variety of resins or polymers with different characteristics and product uses. Nearly 60 billion pounds of plastic were produced in the U.S. in 1988.

Five resins account for nearly 60 percent of all plastics used by consumers. These are low-density polyethylene, used in garbage bags; polyvinyl chloride, used in cooking oil bottles; high-density polyethylene, used in milk jugs; polypropylene, used in car battery cases; and polystyrene, used in disposable food containers. The resin polyethylene terephthalate is produced in much smaller quantities, but is familiar to consumers as the plastic used in soft drink bottles. One-third of all plastics is used in packaging. Because packaging has a short lifetime, it makes up a large part of the plastic waste stream.

Where Do Plastic Wastes Go?

About 80 percent of all municipal solid waste is landfilled, while 10 percent is incinerated and 10 percent recycled. Because only a small percentage of plastics is recycled (less than one percent), virtually all plastics are landfilled or incinerated.

Plastics make up about seven percent (by weight) of the municipal solid waste stream and about 14 to 21 percent by volume.

Do Plastics Cause Disposal Problems?

The slow degradation of plastics is not a significant factor in landfill capacity. Research has shown that other constituents (e.g., paper, wood, food wastes) also degrade very slowly.

Plastics contain additives, however, such as colorants, stabilizers and plasticizers, that may include toxic constituents such as lead and cadmium. Plastics contribute 28 percent of all cadmium in municipal solid waste and approximately two percent of all lead. Data are too limited to determine whether these and other plastic additives contribute significantly to leachate produced in municipal solid waste landfills.

Plastics that contain heavy metal-based additives may also contribute to the metal content of incinerator ash. EPA is conducting a study of substitutes for lead- and cadmium-based additives.

Because of its resistance to degradation, littered plastics debris can have a particularly serious effect in the marine environment (see related fact sheet, *The Facts About Plastics in the Marine Environment).* Enhancing the degradation of plastics has also been offered as a solution. Data are too limited, however, to determine their exact role (see related fact sheet, *The Facts on Degradable Plastics).*

EPA believes source reduction and recycling will provide the most significant results in reducing the impact of plastics in the environment (see related fact sheets, *Plastics: The Facts on Source Reduction* and *The Facts on Recycling Plastics).*

Where Can I Find Additional Information?

Call EPA's RCRA/Superfund Hotline for a free copy of the Executive Summary of the *Report to Congress on Methods to Manage and Control Plastic Wastes* (EPA/530-SW-89-051A). The toll-free number is 1-800-424-9346, or TDD 1-800-553-7672 for the hearing impaired. In Washington D.C., the number is 382-3000 or TDD 475-9652. The Hotline is open from 8:30 a.m. to 7:30 p.m. EST, Monday through Friday. Ask the Hotline for information on ordering the full report.